

**Supplementary Table 1.** Clinical, laboratory and imaging findings and outcome for patients with COVID-19 and abnormal brain MRI.

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10
<b>Age, Sex</b>	32, F	35, F	74, F	32, M	67, M	41, M	60, M	43, M	50, F	61, M
<b>Risk factors</b>	Diabetes, hypertension, heart disease, asthma	None	Diabetes, asthma, obesity	Obesity	Diabetes, hypertension	Diabetes, hypertension	Hypertension, stroke	Hypercholesterolaemia	None	Diabetes, hypercholesterolaemia, hypertension
<b>Presenting symptoms</b>	Shortness of breath	Malaise, cough, fever, shortness of breath	Shortness of breath	Myalgia, fever, cough, shortness of breath	Fever, shortness of breath	Cough, shortness of breath	Shortness of breath, Fever	Fever, shortness of breath, cough	Shortness of breath, cough	Shortness of breath, fever
<b>SARS-CoV-2 RT-PCR</b>	Sputum and BAL positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Sputum positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive
<b>Systolic blood pressure fluctuations (mmHg)</b>	150-230	150-202	150-192	150-172	None	None	150-230	None	150-195	150-200
<b>Onset of neurological symptoms</b>	Seizures (day 2)	Not waking post-sedation (day 15)	Drowsy, left-sided weakness (day 4) and later right-sided weakness (day 7)	Right arm weakness (day 14)	Slow waking post-sedation	Slow waking post-sedation	Prolonged delirium	Headache	Not-waking post-sedation (day 17)	Not-waking post-sedation
<b>Neurological signs</b>	GCS: 3 Extensor plantars	GCS: 3	Bilateral pyramidal signs	Right-sided pyramidal weakness	GCS: 3	Bilateral ulnar neuropathies	Left visual neglect	None	Dilated left pupil	None
<b>Lymphocyte count (lowest) (<math>0.7\text{-}4.0 \times 10^9/\text{L}</math>)</b>	0.29	0.65	0.46	1.0	1.2	1.0	0.44	0.99	0.7	0.15
<b>Neutrophil count (<math>2.0\text{-}7.1 \times 10^9/\text{L}</math>)</b>	2.9	16.0	8.9	10.1	10.1	6.20	9.80	9.3	8.4	N/A
<b>D-dimer (highest) (<math>0\text{-}250 \text{ ng/ml}</math>)</b>	1857 (day 24)	5772 (day 20)	855 (day 1)	4090 (day 8)	7631 (day 25)	8373 (day 1)	11101 (day 17)	12517 (day 8)	1163 (day 16)	464
<b>Fibrinogen (highest) (<math>1.5\text{-}4 \text{ g/L}</math>)</b>	5.68 (day 26)	4.62 (day 10)	4.55 (day 1)	4.79 (day 10)	5.25 (day 1)	5.61 (day 10)	6.43 (day 1)	6.31 (day 3)	5.83 (day 7)	N/A
<b>Ferritin (highest) (<math>5\text{-}204 \text{ mcg/L}</math>)</b>	2351 (day 2)	1979 (day 3)	355 (day 1)	840 (day 1)	736 (day 1)	447 (day 32)	4057 (day 7)	2589 (day 8)	343 (day 3)	N/A
<b>LDH (highest) (<math>125\text{-}220 \text{ U/L}</math>)</b>	NA	1372	495	1363	440	431	786	343	792	N/A
<b>CRP (highest) (<math>0\text{-}5 \text{ mg/L}</math>)</b>	299	144	187	124	421	414	521	455	440	250
<b>CSF findings</b>	Normal	Normal	Not done	Normal	Normal	Not done	Not done	Not done	Not done	Not done
<b>EEG findings</b>	Diffuse encephalopathy	Low amplitude	Not done	Not done	Severe slowing and low amplitude	Not done	Not done	Not done	Not done	Not done
<b>Chest imaging findings</b>	Bi-basal consolidation	Bi-basal consolidation	Bilateral dense infiltrates	Bilateral dense infiltrates	Bilateral mid and lower zone consolidation	Bilateral consolidation	Bi-basal consolidation	Bilateral mid and lower zone consolidation	Bi-basal consolidation	Bilateral mid and lower zone consolidation
<b>Neuroimaging findings (MRI)</b>	Deep watershed white matter hyperintensities and microhaemorrhages	Hypoxic-ischaemic changes in the basal ganglia and microhaemorrhages	Bilateral acute MCA infarcts	Acute necrotising encephalopathy with restricted diffusion and microhaemorrhages	Watershed white matter hyperintensities	ADEM-like changes with micro-haemorrhages and left occipital haemorrhage	Watershed high DWI signal lesions and right parieto-occipital haemorrhage	Subacute infarct in the left parietal lobe	Haemorrhage within the basal ganglia	White matter hyperintensities with microhaemorrhages
<b>Treatment</b>	Supportive	Intravenous methylprednisolone	Apixaban	ECMO	Supportive	Supportive	Supportive	Supportive	Supportive	Supportive
<b>Outcome</b>	Undergoing rehabilitation (day 46)	Died (day 30)	Undergoing rehabilitation (day 53)	Discharged home (day 35)	Improving (GCS: 11) (day 38)	Improving (day 53)	Undergoing rehabilitation (day 55)	Undergoing rehabilitation (day 55)	Died (day 22)	Died (day 15)

	Patient 11	Patient 12	Patient 13	Patient 14	Patient 15	Patient 16	Patient 17	Patient 18	Patient 19	Patient 20
Age, Sex	79, M	68, M	49, M	63, F	63, M	61, M	80, F	91, M	75, F	70, M
Risk factors	Hypertension, chronic kidney disease, atrial fibrillation	Diabetes	Asthma, diabetes, pulmonary embolism	Asthma, diabetes	Asthma	Hypertension, diabetes	Hypertension	Atrial fibrillation, hypertension, malignancy	COPD, TIA	Hypertension
Presenting symptoms	Fever, confusion, left leg weakness	Cough, shortness of breath, chest pain	Shortness of breath	Shortness of breath, diarrhoea	Shortness of breath, confusion, cough	Fever, cough, shortness of breath	Fever, fall with left sided weakness	Fall and long lie	Left facial droop, slurred speech	Shortness of breath, fever
SARS-CoV-2 RT-PCR	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive	Nasopharyngeal swab positive
Blood pressure fluctuations	None	None	None	150-198	None	150-192	None	None	None	None
Onset of neurological symptoms	Confusion, focal weakness (day 1)	Dysphasia, left face and arm weakness (day 12)	Slow waking post-sedation	Not waking post-sedation (day 39)	Confusion (day 1)	Paranoia, hallucinations	Fall with left-sided weakness	Fall (day 1)	Left facial droop and slurred speech (day 1)	Confusion (day 14)
Neurological signs	Left sided weakness	Left sided weakness	GCS: 4	GCS: 3	Confusion	Confusion, right arm weakness	Left-sided weakness	Confusion	Left facial droop and slurred speech	Confusion
Lymphocyte count ( $0.7\text{-}4.0 \times 10^9/\text{L}$ )	0.97	0.64	1.1	0.71	0.30	0.54	1.4	0.43	0.40	1.3
Neutrophil count ( $2.0\text{-}7.1 \times 10^9/\text{L}$ )	3.3	5.3	10.2	11.7	12.7	2.5	9.7	3.5	9.4	3.3
D-dimer (highest) ( $0\text{-}250 \text{ ng/ml}$ )	NA	918 (day 12)	36381 (day 1)	5245 (day 37)	382 (day 20)	9297 (day 2)	N/A	N/A	N/A	2671
Fibrinogen (highest) ( $1.5\text{-}4 \text{ g/L}$ )	NA	NA	1.75	5.91 (day 18)	5.40 (day 21)	4.14 (day 2)	N/A	N/A	N/A	6.71
Ferritin (highest) ( $5\text{-}204 \text{ mcg/L}$ )	NA	740 (day 12)	1368 (day 1)	1747 (day 1)	3528 (day 1)	1769 (day 24)	N/A	N/A	N/A	1299
LDH (highest) ( $125\text{-}220 \text{ U/L}$ )	NA	303	1929	989 (day 1)	NA	NA	N/A	N/A	N/A	369
CRP (highest) ( $0\text{-}5 \text{ mg/L}$ )	108	198	308	233 (day 1)	226 (day 2)	351 (day 4)	9	78	184	137
CSF findings	Not done	Not done	Not done	Not done	Matched bands; mild raised protein	Raised protein	Not done	Not done	Not done	Not done
EEG findings	Not done	Not done	Not done	Diffuse encephalopathy	Severe encephalopathy	Not done	Not done	Not done	Not done	Excess generalised theta activity and intermittent slow activity. Occasional sharply contoured waves with emphasis over the right temporal region
Chest imaging findings	Normal	Bilateral consolidation	Bilateral consolidation	Bilateral mid and lower zone consolidation	Bilateral mid and lower zone consolidation	Bilateral mid and lower zone consolidation	Not done	Viral pneumonitis	Normal	Bilateral mid/upper zone pneumonic infiltrates
Neuroimaging findings (MRI)	Right internal carotid artery occlusion and multiple infarcts	Acute right MCA Infarct	Acute necrotising encephalopathy, and microhaemorrhages	Subarachnoid and intraventricular haemorrhage	Scattered microhaemorrhages showing interval increase	Scattered microhaemorrhages	Acute right external capsule infarct	Scattered microhaemorrhages	Scattered microhaemorrhages	Subacute infarct
Treatment	Supportive	Anti-platelets	Supportive	Supportive	Supportive	Supportive	Supportive	Supportive	Supportive	Supportive
Outcome	Transferred to rehabilitation ward (day 13)	Discharged home (day 21)	Transferred to rehabilitation ward (day 50)	Died (day 41)	Mild improvement (day 58)	Discharged home (day 57)	Discharged home (day 5)	Discharged (day 22)	Discharged (day 25)	